

HIV and AIDS Risk Behaviors in Juvenile Detainees: Implications for Public Health Policy

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HIV and AIDS are increasingly diseases of minorities and the disadvantaged.^{1,2} These same groups are disproportionately involved in the justice system.³ Detained youths may be at particular risk. Sexually transmitted diseases, related to HIV and AIDS,^{4–6} are prevalent among detained youths. Moreover, although HIV seropositivity is infrequent among detained youths,⁴ studies of adult detainees suggest that detained youths are at great risk for developing HIV as they age.^{7–24}

Although researchers have studied HIV and AIDS risk behaviors among detained youths,^{5,6,25–31} our knowledge is still limited. Few studies used random samples; many used volunteers or referred samples.^{5,28–30} Some studies excluded females.^{5,26,30} Only 1 study examined differences by race/ethnicity.³¹ No study has examined differences by age. Some studies investigated only sexual risk behaviors^{28,29} or a limited number of sexual and drug risk behaviors.^{25,27,31}

This study had (1) a stratified random sample large enough to compare rates by gender, race/ethnicity, and age and (2) comprehensive measures of sexual and drug HIV and AIDS risk behaviors.

METHODS

Participants were part of the Northwestern Juvenile Project, a longitudinal study of 1829 youths (aged 10–18 years) initially arrested and detained between 1995 and 1998 at the Cook County Juvenile Temporary Detention Center in Chicago, Ill.³² The random sample was stratified by gender, race/ethnicity, age, and charge severity. We began collecting HIV and AIDS risk data 6 months after the larger study began. The sample size was

800: 340 females and 460 males. The sample included 145 non-Hispanic Whites, 430 African Americans, 223 Hispanics, and 2 youths who self-identified as “other”; 3.9% of the eligible youths refused to participate. Additional information on our methods is published elsewhere.³²

Interviewers (master’s level or equivalent) gathered HIV and AIDS risk data with the AIDS Risk Behavior Assessment, compiled from 2 widely used instruments (the National Institute on Drug Abuse Risk Behavior Assessment³³ and the Adolescent Health Survey³⁴) and selected items from the Diagnostic Interview Schedule for Children, Version 2.3.³⁵

We reduced the risk of type I error by setting our α level to .01 and by performing specific tests only when the overall test result was significant.³⁶ We weighted all estimates to reflect the detention center’s population and used Taylor series linearization^{37,38} to correct tests of inference.

RESULTS

We report rates of HIV and AIDS sexual and drug risk behaviors by gender and race/ethnicity (Table 1) and by gender and age (Table 2).

Gender

More than 90% of the males were sexually active; 60.8% had more than 1 sexual partner in the last 3 months. Significantly more males than females engaged in many of the examined sexual risk behaviors. Drug risk behaviors were common among both males and females; none, however, varied significantly by gender. More than 40% of both males and females had been tattooed. However, injection drug use risk behaviors were rare.

Race/Ethnicity

Among males, significantly more African Americans than non-Hispanic Whites engaged in certain sexual risk behaviors. However, many drug risk behaviors, including ever using drugs other than marijuana and recent use of drugs other than marijuana, were more prevalent among non-Hispanic Whites and Hispanics than among African Americans.

TABLE 1—HIV and AIDS Sexual and Drug Risk Behaviors, by Gender and Race/Ethnicity

	Males, %					Females, %				
	Total N = 460 ^a	African American n = 205	Non- Hispanic White n = 101	Overall Test of Race/ Ethnicity	Specific Tests of Race/ Ethnicity	Total N = 340 ^a	African American n = 225	Non- Hispanic White n = 44	Overall Test of Race/ Ethnicity	Specific Tests of Race/ Ethnicity
Sexually active	91.0	93.2	75.3	85.8	P < .01	86.7	86.1	93.3	82.9	NS
Multiple partners: > 1 in past 3 mos	60.8	64.7	32.7	53.1	P < .001	26.3	22.9	38.2	18.8	NS
Multiple partners: > 3 in past 3 mos	37.3	41.9	14.9	23.9	P < .01	5.0	6.3	6.7	0.0	NS ^c
Ever had vaginal sex	90.7	92.9	75.3	85.9	P < .01	69.2	66.3	86.5	65.1	NS
Recent (past mo) unprotected vaginal sex	35.0	33.7	32.1	40.8	NS	41.3	35.5	61.8	42.5	P < .01
Ever had vaginal sex with high-risk partner ^d	21.5	22.5	11.3	20.6	NS	10.9	8.4	25.9	13.1	P < .01
Ever had oral sex	42.2	42.3	49.3	39.0	NS	26.3	21.8	49.4	17.4	P < .001
Recent (past mo) unprotected oral sex	31.5	31.7	35.9	28.4	NS	20.5	16.5	44.9	7.4	P < .001
Ever had oral sex with high-risk partner ^d	7.6	6.8	6.0	11.3	NS	2.1	1.3	9.4	1.9	NS
Ever had anal sex	11.9	11.9	10.2	12.7	NS	6.7	3.1	9.0	1.2	NS
Recent (past mo) unprotected anal sex	2.9	2.7	5.3	3.3	NS	1.4	1.3	4.5	0.0	NS ^e
Ever had anal sex with high-risk partner ^d	2.0	2.0	2.8	1.9	NS	3.5	0.0	0.0	0.0	... ^e
Ever had sex when drunk or high	67.8	71.1	56.6	55.9	NS	52.3	46.8	73.6	53.6	P < .01
Ever had unprotected sex when drunk or high	32.9	30.8	35.5	40.2	NS	33.6	27.7	48.3	36.8	NS
Ever traded sex and drugs	2.7	2.5	4.3	2.9	NS	3.3	4.1	2.2	1.4	NS
Ever used alcohol	87.8	85.2	93.5	97.8	P < .001	90.6	88.8	100.0	91.2	NS ^c
Used alcohol before age 13	28.2	25.7	46.3	34.2	NS	32.4	24.9	42.7	44.3	P < .01
Recent (past mo) use of alcohol	58.3	57.4	60.9	60.9	NS	53.8	51.4	70.8	65.4	NS
Frequent use of alcohol (> 3 times in past 3 mos)	48.0	45.0	56.9	57.7	NS	46.2	39.8	56.2	56.3	NS
Ever used marijuana	93.9	95.2	90.8	88.6	NS	90.7	88.8	100.0	91.6	NS ^c
Used marijuana before age 13	27.6	26.0	37.9	32.2	NS	28.5	22.8	33.7	34.5	NS
Recent (past mo) use of marijuana	77.9	78.9	75.2	73.7	NS	67.8	63.3	73.0	77.0	NS
Frequent use of marijuana (> 3 times in past 3 mos)	68.9	68.8	69.7	68.7	NS	60.7	53.9	76.4	72.2	P < .01
										Non-Hispanic White > African American; Hispanic > African American

Continued

TABLE 1—Continued

Ever used other substances	14.6	3.9	57.9	49.8	<i>P</i> < .001	Non-Hispanic White > African American; Hispanic > African American	21.0	4.0	58.4	55.0	<i>P</i> < .001	Non-Hispanic White > African American	NS
Used other substances before age 13	0.9	0.0	8.0	2.8	<i>P</i> < .001 ^c	Non-Hispanic White > Hispanic	1.8	0.0	9.0	5.6	NS ^c		NS ^c
Recent (past mo) use of other substances	7.5	3.6	30.6	17.6	<i>P</i> < .01	Non-Hispanic White > African American; Hispanic > African American	8.5	1.9	29.2	26.3	<i>P</i> < .001	Non-Hispanic White > African American; Hispanic > African American	NS
Frequent use of other substances (> 3 times in past 3 mos)	4.1	1.9	22.2	8.4	<i>P</i> < .01	Non-Hispanic White > African American; Hispanic < non-Hispanic White	8.7	1.2	24.7	12.3	<i>P</i> < .001	Non-Hispanic White > African American; Hispanic > African American	NS
Ever injected drugs	0.1	0.0	2.1	0.0	NS ^c		1.2	0.4	2.2	3.9	NS		NS ^c
Ever been tattooed	42.7	39.0	35.1	60.3	NS		45.4	46.3	47.2	50.2	NS		NS
Ever shared needles or equipment (injection drug use or tattooing)	3.0	3.6	0.0	1.1	NS ^c		1.2	0.0	2.2	5.9	NS ^c		NS ^c
Ever shared needles in a risky location (injection drug use or tattooing)	1.4	1.8	0.0	0.0	...		0.0	0.0	0.0	0.0
Ever shared needles without cleaning (injection drug use or tattooing)	1.4	1.8	0.0	0.0	...		0.2	0.0	0.0	1.4

Note. NS = not significant.

^aReported N's are the total number of subjects in each column. Some rows have missing data, but no row is missing more than 14 cases. Two subjects who self-identified as an "other" race were excluded from analysis of racial/ethnic differences but are included in "total" columns.

^bTests of gender differences controlling for race/ethnicity.

^cTests were computed with 1 less parameter because of presence of cell frequencies of zero.

^dHigh-risk partners include persons who have ever worked as a prostitute, persons with HIV or AIDS, persons who inject drugs, and persons whose sexual history is not well known.

^eTests were not computed because of presence of cell frequencies of zero.

^fAfrican American, non-Hispanic White, and Hispanic reports are all zero. Only females in the "other" racial/ethnic group reported anal sex with a high-risk partner.

Among females, significantly more non-Hispanic Whites than African Americans or Hispanics engaged in several of the sexual risk behaviors. As among males, drug risk behaviors, including ever using drugs other than marijuana and recent use of drugs other than marijuana, were more prevalent among non-Hispanic Whites and Hispanics than among African Americans.

Some drug risk behaviors were more prevalent among non-Hispanic White and Hispanic females than among African Americans.

Age

Our choice of categories was guided by empirical analyses.³⁹ Among males, even in the youngest age group (10–13 years), 62% to 76% had vaginal sex, used alcohol, or used marijuana. Many behaviors were higher in the 14-to-15 and the 16 years and older age groups than in the 10- to 13-year-old group. However, few significant differences were found between the 2 older age groups.

Among females aged 10 to 13, more than half were sexually active, more than 40% had vaginal sex, more than 80% used alcohol, and more than two thirds used marijuana. Many risk behaviors were more prevalent among older females. Almost 95% of the females aged 16 and older were sexually active, more than half had recent unprotected vaginal sex, more than 90% used alcohol or marijuana, and more than half had been tattooed.

DISCUSSION

Our findings confirmed that HIV and AIDS risk behaviors are a substantial problem among detained youths, posing a challenge to the justice system and to the larger public health system.^{5,6,25–31,40–44} The rates found in our study are much higher than those in the general population⁴⁵ and confirm prior findings of racial/ethnic differences.^{45–47} Ninety-five percent of our sample engaged in 3 or more risk behaviors reported in this brief; 65% reported 10 or more risk behaviors.

Subjects may have exaggerated their behaviors or underreported them. Moreover, this study used only 1 site and pertains to only urban youths. Nevertheless, our data have important implications for research and public health policy.

TABLE 2—HIV and AIDS Sexual and Drug Risk Behaviors (Percentage), by Gender and Age

	Males					Females				
	10-13 n = 139 ^a	14-15 n = 132	≥16 n = 189	Overall Tests of Age	Specific Tests of Age	10-13 n = 30 ^a	14-15 n = 185	≥16 n = 125	Overall Tests of Age	Specific Tests of Age
Sexually active	62.4	86.9	98.1	<i>P</i> < .001	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13	53.6	86.3	94.9	<i>P</i> < .001	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13
Multiple partners: > 1 in past 3 mos	41.7	63.8	61.9	NS		16.0	22.2	34.4	NS	
Multiple partners: > 3 in past 3 mos	30.7	41.9	35.4	NS		7.2	3.9	6.0	NS	
Ever had vaginal sex	62.0	86.2	98.0	<i>P</i> < .001	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13	42.8	66.2	79.3	<i>P</i> < .01	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13
Recent (past mo) unprotected vaginal sex	16.2	37.3	36.7	<i>P</i> < .01	14-15 > 10-13; ≥16 > 10-13	18.7	34.8	55.5	<i>P</i> < .01	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13
Ever had vaginal sex with high-risk partner ^b	8.1	34.5	15.5	<i>P</i> < .01	14-15 > 10-13	16.0	10.3	10.4	NS	
Ever had oral sex	15.6	45.0	44.7	<i>P</i> < .001	14-15 > 10-13; ≥16 > 10-13	6.0	21.7	37.3	<i>P</i> < .05	≥16 > 14-15; ≥16 > 10-13
Recent (past mo) unprotected oral sex	9.5	40.9	28.9	<i>P</i> < .001	14-15 > 10-13; ≥16 > 10-13	6.0	15.7	30.5	NS	
Ever had oral sex with high-risk partner ^b	4.0	9.2	7.1	NS		0.0	1.6	3.3	NS	
Ever had anal sex	16.8	16.4	8.3	NS		0.0	5.3	10.2	NS	
Recent (past mo) unprotected anal sex	6.5	5.4	0.8	<i>P</i> < .01	14-15 ≥ 16; 10-13 ≥ 16	0.0	2.2	0.5	NS	
Ever had anal sex with high-risk partner ^b	1.0	5.1	0.2	NS		0.0	0.0	9.1	... ^c	
Ever had sex when drunk or high	29.0	66.3	74.7	<i>P</i> < .001	14-15 > 10-13; ≥16 > 10-13	16.3	49.4	64.1	<i>P</i> < .001	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13
Ever had unprotected sex when drunk or high	12.1	31.2	37.1	<i>P</i> < .01	14-15 > 10-13; ≥16 > 10-13	10.2	28.1	46.4	<i>P</i> < .01	14-15 > 10-13; ≥16 > 14-15; ≥16 > 10-13
Ever traded sex and drugs	1.0	0.3	4.4	NS		0.0	3.6	3.6	NS	
Ever used alcohol	69.0	87.0	91.4	NS		80.4	90.2	93.6	NS	
Used alcohol before age 13	53.1	26.3	25.5	<i>P</i> < .01	10-13 > 14-15; 10-13 ≥ 16	66.0	30.4	27.5	<i>P</i> < .001	10-13 > 14-15; 10-13 ≥ 16
Recent (past mo) use of alcohol	33.2	54.5	64.7	<i>P</i> < .01	14-15 > 10-13; ≥16 > 10-13	39.1	57.1	52.5	NS	
Frequent use of alcohol (> 3 times in past 3 mos)	24.1	49.7	50.7	<i>P</i> < .01	14-15 > 10-13; ≥16 > 10-13	13.2	45.7	54.3	<i>P</i> < .001	14-15 > 10-13; ≥16 > 10-13
Ever used marijuana	76.1	94.2	96.5	<i>P</i> < .01	14-15 > 10-13; ≥16 > 10-13	68.7	92.1	93.8	<i>P</i> < .001	14-15 > 10-13; ≥16 > 10-13
Used marijuana before age 13	54.8	37.1	17.3	<i>P</i> < .001	14-15 ≥ 16	44.2	29.4	23.5	<i>P</i> < .001	10-13 > 14-15; 10-13 ≥ 16
Recent (past mo) use of marijuana	60.1	78.8	80.1	NS		40.6	69.7	71.4	NS	
Frequent use of marijuana (> 3 times in past 3 mos)	50.7	76.7	66.8	NS		27.4	59.6	69.8	<i>P</i> < .01	14-15 > 10-13; ≥16 > 10-13
Ever used other substances	5.4	15.5	15.5	NS		7.5	17.5	28.7	NS	
Used other substances before age 13	2.1	1.4	0.4	<i>P</i> < .01	10-13 ≥ 16	7.5	1.7	0.6	NS	
Recent (past mo) use of other substances	2.0	8.9	7.4	NS		2.4	7.8	10.8	NS	
Frequent use of other substances (> 3 times in past 3 mos)	1.8	6.5	2.9	NS		2.4	3.9	16.8	NS	

Continued

TABLE 2—Continued

Ever injected drugs	0.0	0.2	0.1	NS ^d		0.0	1.4	1.2	NS ^d	
Ever tattooed	20.4	40.3	47.7	$P < .01$	14-15 > 10-13; ≥16 > 10-13	22.9	41.2	56.4	$P < .01$	14-15 > 10-13; ≥16 > 10-13
Ever shared needles or equipment (injection drug use or tattooing)	1.0	3.8	2.8	NS ^d		0.0	1.4	1.2	NS ^d	
Ever shared needles in a risky location (injection drug use or tattooing)	0.0	3.8	0.0	... ^c		0.0	0.0	0.0	... ^c	
Ever shared needles without cleaning (injection drug use or tattooing)	0.0	3.8	0.0	... ^c		0.0	0.0	0.6	... ^c	

Note. NS = not significant.

^aReported N's are the total number of subjects in each column. Some rows have missing data, but no row is missing more than 14 cases.

^bHigh-risk partners include persons who have ever worked as a prostitute, persons with HIV or AIDS, persons who inject drugs, and persons whose sexual history is not well known.

^cTests were not computed because of presence of cell frequencies of zero.

^dTests were computed with 1 less parameter because of presence of cell frequencies of zero.

Directions for Future Research

Research is needed to examine how psychosocial factors common among delinquent youths—sexual abuse, poor family functioning, mental disorders, lifetime trauma, and cognitive and functional impairment⁴⁸—affect the development of HIV and AIDS risk behaviors. Information is especially needed on structural factors that are commonly associated with delinquency among youths: poverty, poor education, and neighborhood disintegration.^{49–52} Longitudinal studies would provide data on onset, persistence, desistance, and recurrence of HIV and AIDS risk behaviors and whether specific patterns of risk predict seroconversion.

Implications for Public Health Policy

The public health system must

- *Provide interventions for detained youths.* Because many detainees are truant,⁵³ they may miss school-based interventions. Interventions could improve HIV and AIDS knowledge, attitudes, and behavioral skills.^{27,30,54} Intervening with detained youths could reduce the likelihood of the onset of the most risky HIV and AIDS risk behaviors—having unprotected anal sex, using or sharing needles, and trading drugs for sex—that are still relatively rare.
- *Intervene early.* The youngest age group (10–13 years) had lower rates of the most risky behaviors (e.g., multiple sexual partners, vaginal sex with high-risk partners, and un-

protected sex while drunk or high). Interventions with younger adolescents could avert the most serious risk behaviors.

- *Target specific patterns of risk based on gender, race/ethnicity, and age.* For example, female detainees, although relatively few in number, require special programs. Sexual risk behaviors may place females at greater risk than males because they are more likely to contract HIV from unprotected vaginal sex.^{55–57} Moreover, females' behaviors place their unborn children at risk.

Providing HIV and AIDS interventions to juvenile detainees could reduce HIV and AIDS among general population youths. Most detainees return to their communities within 2 weeks.³ Moreover, many youths at particular risk for HIV and AIDS—youths who use drugs, youths who trade sex for money or drugs, and runaways—will eventually cycle through the detention center. HIV and AIDS risk behaviors among juvenile detainees are a public health problem, not just a problem for the juvenile justice system. ■

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Contributors

L. A. Teplin, the principal investigator, planned the study, directed the project, and crafted the presentation. A. A. Mericle developed the HIV and AIDS risk assessment, supervised interviewer training and data preparation, conducted much of the data analysis, and drafted some sections of the brief. G. M. McClelland directed the data operation and data analysis and oversaw preparation of the tables. K. M. Abram directed the field study. All authors participated in the preparation of the final manuscript.

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Human Participant Protection

This research was approved by the Northwestern University and Centers for Disease Control and Prevention institutional review boards. We obtained informed consent from all participants aged 18 and older. For participants younger than 18, we obtained assent from the youths and consent from a parent or guardian, whenever possible; when this was not possible, youth assent was overseen by a participant advocate representing the interests of the youth.

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